

Marconi P 2000 Series of Transmitters for Satellite Communication Systems

With the coming introduction of the higher capacity multiple-access satellites such as INTELSAT III, the Company is developing a new range of transmitters to meet the INTELSAT global communication specifications. This new range of transmitters called the P.2000 series, is aimed to embrace the requirements of not only the higher capacity stations but also those having more modest traffic needs. The great experience gained from designing, manufacturing and commissioning satellite communication ground stations is being applied to this new range of transmitters to ensure that they are technically advanced, reliable, simple to maintain, and economic in capital cost.

The P.2000 range of transmitters includes not only the transmitter described here, but also a number of smaller power designs for use in conditions of lower traffic density.

FEATURES

Designed to meet INTELSAT ground station specifications.

All solid-state except for final power amplifier.

Modular design to permit maximum system flexibility and extendability.

Comprehensive monitoring and metering, with full remote control facilities.

Maximum reliability ensured by modern techniques of production and quality control and conservative rating of components.

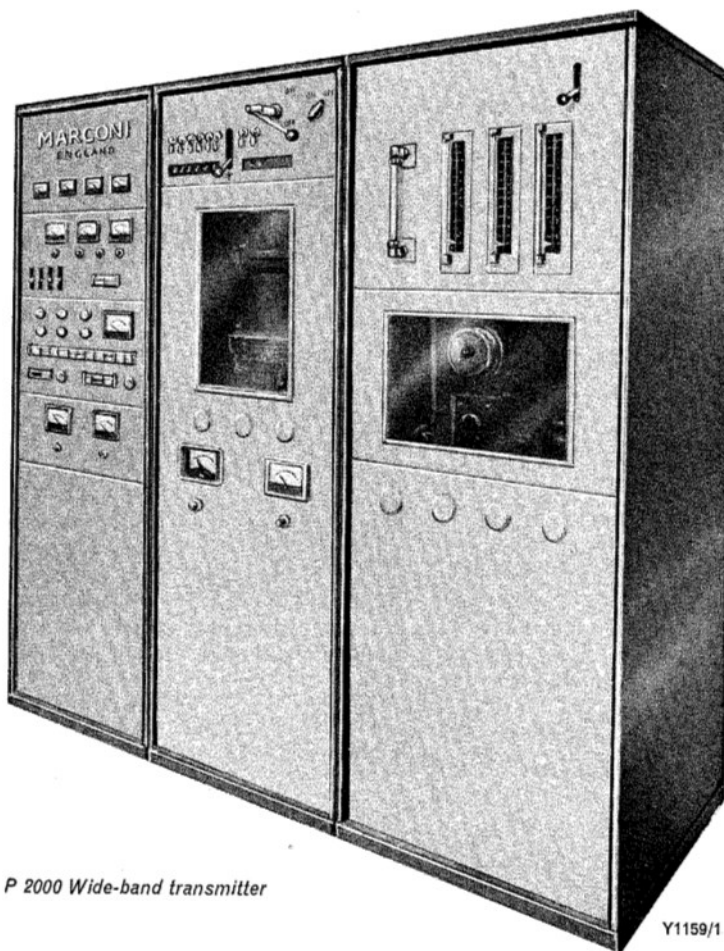
Particular attention has been directed towards good accessibility and ease of maintenance.

Equipment Design

The design of these equipments is based on many years of experience in the high-power transmitter field. This together with the use of modern techniques of production and quality control, ensures that maximum reliability will be obtained.

The P.2000 series of transmitters are designed on a modular concept with r.f. packages and separate power supplies to permit maximum system flexibility and extendability.

The systems are being designed to allow for the provision of duplicate standby equipment with continuous monitoring and automatic changeover between working and standby to ensure minimum downtime on high capacity systems.



P 2000 Wide-band transmitter

Y1159/1

Wide-band Transmitter P.2000

This transmitter has been designed for the high capacity station applications, requiring full coverage of the 500 MHz wide, 6 GHz communications band. It incorporates a high power t.w.t amplifier delivering up to 5 kW of c.w for a single carrier. With a design saturation power of 12 kW it is ideally suited for multicarrier operations. An intermediate power (50) t.w.t feeds the high power t.w.t, the rest of the circuitry being solid state. Cooling is by means of under floor or under plinth forced air cooling.

DATA SUMMARY

Frequency range: 5.925-6.425 GHz.

Bandwidth: 500 MHz.

Input level: 5 mW max. for 4.5 kW output

Intermodulation: With three equal carriers to total mean power of 750 watts, the worst intermodulation product will be at least 26 dB below the level of each carrier.

Gain slope: less than 0.03 dB/MHz maximum, coverage over 500 MHz band 0.02 dB/MHz.

Power supply: 380-440V $\pm 10\%$ 3 phase supply 50-60 Hz $\pm 10\%$

Power consumption: 70 kVA at better than 0.9 power factor.

Climatic conditions: Temperature 0-45°C. Humidity 90% at 40°C max.

Altitude 6000 ft (1830 m) maximum.

Dimensions:

R.F. unit 8 ft 6 in. \times 2 ft 6 in. \times 6 ft high

Power unit 10 ft 6 in. \times 2 ft 6 in. \times 6 ft high

Weight:

R.F. unit 5000 lb

Power unit 5800 lb

THE MARCONI COMPANY LIMITED Space Communications Division

Great Baddow, Chelmsford, Essex
Telephone: Chelmsford 53255. Telex: 99201
Telegrams: Expanse Chelmsford Telex